Cement - ?
Solid block = ?
20mm = ?

GRADIATION FOR WMM

MORTH TABLE – 400 - 11

NAME OF WORK : Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7 & 8 Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

Sub-Name of road : Improvements to Roads, Drains and Footpath from Sanjeevininagar, Ashwath Katte to Kodigehalli Main Road at Ravishankar Residency Layout in ward No 07 - Byatarayanapura, Kodigehalli Sub Division.

Client : Executive Engineer, Byatarayanapura Division, No.2152/20, Defence colony, Sahakara Nagara, Bangalore-92

Name of the Agency : Benaka Developers & Projects Pvt. Ltd.

Reference: Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018

Date of Testing : 07-02-18

IS Sieve Size in mm	Weight Retained (gms)	Cumulative Weight Retained (gms)	Cumulative % of Retained	Cumulative % of Passing	Specific Limits
53	0	0	0	100	100
45	275	275	3.1	96.9	95-100
22.4	2665	2940	33.3	66.7	60-80
11.2	1345	4285	48.5	51.5	40-60
4.75	1290	5575	63.1	36.9	25-40
2.36	1025	6600	74.7	25.3	15-30
0.600	965	7565	85.6	14.4	8-22
0.075	940	8505	96.2	3.8	0-8

Note:

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B V H Consulting Engineers
Survey and Engineering Project Consultants

Determination of Flakiness Index & Elongation Index of Coarse Aggregate.

NAME OF WORK : Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7 & 8 Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

Sub-Name of road : Improvements to Roads, Drains and Footpath from Sanjeevininagar, Ashwath Katte to Kodigehalli Main Road at Ravishankar Residency Layout in ward No 07 - Byatarayanapura, Kodigehalli Sub Division.

Client : **Executive Engineer, Byatarayanapura Division, No.2152/20, Defence colony, Sahakara Nagara, Bangalore-92**

Name of the Agency : **Benaka Developers & Projects Pvt. Ltd.**

Reference : Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018

Date of Testing : **07-02-18**

Result : Flakiness Index = 11.58%.

Elongation Index = 13.58%.

Result: Combined Flakiness & Elongation Index = 25.16%.

Comments:

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%.

Note:

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Ashly .N.D
AE(W)

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Aggregate Impact Value (W.M.M.)

IS : 2386 Part IV

NAME OF WORK : Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7 & 8 Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

Sub-Name of road : Improvements to Roads, Drains and Footpath from Sanjeevininagar, Ashwath Katte to Kodigehalli Main Road at Ravishankar Residency Layout in ward No 07 - Byatarayanapura, Kodigehalli Sub Division.

Client : **Executive Engineer, Byatarayanapura Division, No.2152/20, Defence colony, Sahakara Nagara, Bangalore-92**

Name of the Agency : **Benaka Developers & Projects Pvt. Ltd.**

Reference : Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018

Date of Testing : **07-02-18**

Sl. No	Details	Trial No.		Average
		1	2	
1	Total Weight of aggregate sample filling the cylindrical measure = W_1 g	388	385	
2	Weight of aggregate passing throw 2.36 mm IS sieve after the test = W_2 g	89	86	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	355	358	
4	Aggregate Impact value = percent fine	22.94	22.34	22.64
	$100*(W_2/W_1)\%$			

Comments:

- **Maximum allowable Aggregate Impact value for Wet Mix Macadam is 30%.**

Note:

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GRADIATION FOR WMM

MORTH TABLE – 400 - 11

NAME OF WORK : Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7 & 8 Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

Sub-Name of road : Improvements to Roads, Drains and Footpath from Sanjeevininagar, Ashwath Katte to Kodigehalli Main Road at Ravishankar Residency Layout in ward No 07 - Byatarayanapura, Kodigehalli Sub Division.

Client : **Executive Engineer, Byatarayanapura Division, No.2152/20, Defence colony, Sahakara Nagara, Bangalore-92**

Name of the Agency : **Benaka Developers & Projects Pvt. Ltd.**

SAMPLE ID : Sanjeevini Nagara, Theertha Bakery Road

Reference: Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018

Date of Testing : **13-02-18**

IS Sieve Size in mm	Weight Retained (gms)	Cumulative Weight Retained (gms)	Cumulative % of Retained	Cumulative % of Passing	Specific Limits
53	0	0	0	100	100
45	275	275	3.1	96.9	95-100
22.4	2665	2940	33.3	66.7	60-80
11.2	1345	4285	48.5	51.5	40-60
4.75	1290	5575	63.1	36.9	25-40
2.36	1025	6600	74.7	25.3	15-30
0.600	965	7565	85.6	14.4	8-22
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B V H Consulting Engineers

Survey and Engineering Project Consultants

Determination of Flakiness Index & Elongation Index of Coarse Aggregate.

NAME OF WORK : Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7 & 8 Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

Sub-Name of road : Improvements to Roads, Drains and Footpath from Sanjeevininagar, Ashwath Katte to Kodigehalli Main Road at Ravishankar Residency Layout in ward No 07 - Byatarayanapura, Kodigehalli Sub Division.

Client : **Executive Engineer, Byatarayanapura Division, No.2152/20, Defence colony, Sahakara Nagara, Bangalore-92**

Name of the Agency : **Benaka Developers & Projects Pvt. Ltd.**

SAMPLE ID : Sanjeevini Nagara, Theertha Bakery Road

Reference : Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018

Date of Testing : **13-02-18**

Result : Flakiness Index = 11.58%.

Elongation Index = 13.58%.

Result: Combined Flakiness & Elongation Index = 25.16%.

Comments:

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%.

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Aggregate Impact Value (W.M.M.)

IS : 2386 Part IV

NAME OF WORK : Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7 & 8 Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

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Client : **Executive Engineer, Byatarayanapura Division, No.2152/20, Defence colony, Sahakara Nagara, Bangalore-92**

Name of the Agency : **Benaka Developers & Projects Pvt. Ltd.**

SAMPLE ID : Sanjeevini Nagara, Theertha Bakery Road

Reference : Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018

Date of Testing : **13-02-18**

Sl. No	Details	Trial No.		Average
		1	2	
1	Total Weight of aggregate sample filling the cylindrical measure = W_1 g	388	385	
2	Weight of aggregate passing throw 2.36 mm IS sieve after the test = W_2 g	89	86	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	355	358	
4	Aggregate Impact value = percent fine	22.94	22.34	22.64
	$100*(W_2/W_1)\%$			

Comments:

- **Maximum allowable Aggregate Impact value for Wet Mix Macadam is 30%.**

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TEST FOR PRIME COAT

NAME OF WORK : Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7& 8Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

Sub - Name of Work : Improvements to Roads, Drains and Footpath from Sanjeevininagar, Ashwath Katte to Kodigehalli Main Road at Ravishankar Residency Layout in ward No 07 - Byatarayanapura, Kodigehalli Sub Division.

Client : Executive Engineer, Byatarayanapura Division, NO.2152/20, Defence colony, Sahakara Nagara, Bangalore-92

Name of the Agency : Benaka Developers & Projects Pvt. Ltd.

Reference : Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018

Date of Testing : 06-05-2018

Tray no.	1	2
Weight of the tray(b)gms	1688	1688
Weight of the tray with prime(a)gms	1713.75	1712.92
Weight of prime(a-b)gms	25.75	24.92
Tray area (sqm)	300*300=0.09sqm	300*300=0.09sqm
Rate of spray (kg/sqm)	0.02575/0.09=0.28 kg/sqm	0.02492/0.09=0.27 kg/sqm
Avg. Rate of spray (kg/sqm)	0.275	

Specified rate as per Specification: 0.25 Kg/sqm

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TEST FOR PRIME COAT

NAME OF WORK : Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7& 8Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

Sub - Name of Work : Improvements to Roads, Drains and Footpath from Sanjeevininagar, Ashwath Katte to Kodigehalli Main Road at Ravishankar Residency Layout in ward No 07 - Byatarayanapura, Kodigehalli Sub Division.

Client : **Executive Engineer, Byatarayanapura Division, NO.2152/20, Defence colony, Sahakara Nagara, Bangalore-92**

Name of the Agency : **Benaka Developers & Projects Pvt. Ltd.**

Reference : Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018

Date of Testing : **06-05-2018**

Determination	Unit	Trial no.	
Size of tray in (sqm)		0.45x0.45	0.45x0.45
Area of tray (a)	Sqm	0.2025	0.2025
Initial Wt of empty tray(b)	Kg	1.625	1.627
Final Wt of tray with prime coat (c)	Kg	1.763	1.756
Weight of Prime coat (d=c-b)	Kg	0.1380	0.1290
Rate of Spray of prime coat	Kg/Sqm	0.681	0.637
Average	Kg/Sqm	0.659	
Specified Limit	Kg/Sqm	0.60 Kg/sqm	

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TEST FOR TACK COAT

NAME OF WORK : Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7& 8Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

Sub - Name of Work : Improvements to Roads, Drains and Footpath from Sanjeevininagar, Ashwath Katte to Kodigehalli Main Road at Ravishankar Residency Layout in ward No 07 - Byatarayanapura, Kodigehalli Sub Division.

Client : Executive Engineer, Byatarayanapura Division, NO.2152/20, Defence colony, Sahakara Nagara, Bangalore-92

Name of the Agency : Benaka Developers & Projects Pvt. Ltd.

Reference : Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018

Date of Testing : 08-05-2018

Prime Coat/tack Coat

Tray no.	1	2
Weight of the tray(b)gms	1688	1688
Weight of the tray with prime(a)gms	1714	1713
Weight of prime(a-b)gms	26	25
Tray area (sqm)	300*300=0.09sqm	300*300=0.09sqm
Rate of spray (kg/sqm)	0.026/0.09=0.29 kg/sqm	0.025/0.09=0.27 kg/sqm
Avg. Rate of spray (kg/sqm)	0.28	

Specified rate as per Specification: 0.25 Kg/sqm

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TEST FOR TACK COAT

NAME OF WORK : Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7& 8Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

Sub - Name of Work : Improvements to Roads, Drains and Footpath from Sanjeevininagar, Ashwath Katte to Kodigehalli Main Road at Ravishankar Residency Layout in ward No 07 - Byatarayanapura, Kodigehalli Sub Division.

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Reference : Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018

Date of Testing : 08-05-2018

Tray no.	1	2
Weight of the tray(b)gms	1688	1688
Weight of the tray with prime(a)gms	1713.75	1712.92
Weight of prime(a-b)gms	25.75	24.92
Tray area (sqm)	300*300=0.09sqm	300*300=0.09sqm
Rate of spray (kg/sqm)	0.02575/0.09=0.28 kg/sqm	0.02492/0.09=0.27 kg/sqm
Avg. Rate of spray (kg/sqm)	0.275	

Specified rate as per Specification: 0.25 Kg/sqm

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BITUMEN EXTRACTION TEST [FIELD TEST]

NAME OF WORK : Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7& 8 Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

Sub - Name of Work : Improvements to Roads, Drains and Footpath from Sanjeevininagar, Ashwath Katte to Kodigehalli Main Road at Ravishankar Residency Layout in ward No 07 - Byatarayanapura, Kodigehalli Sub Division.

Client : Executive Engineer, Byatarayanapura Division, NO.2152/20, Defence colony, Sahakara Nagara, Bangalore-92

Name of the Agency : Benaka Developers & Projects Pvt. Ltd.

Reference : Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018

Date of Testing : 08-05-2018

Tests on Bituminous Concrete				
Test No 1			**Test Time :**	**10.30 AM**
Sample No	**Initial Weight of the Mix [w1], in g**	**Weight of mix after extraction of Bitumen [w2], in g**	**Difference in weight, w=[w1-w2], in g**	**Percentage of Bitumen Extracted = [(w /w1)*100]-100, in %**
1	500	473	27	5.4
2	500	473	27	5.4
Test No 2			**Test Time :**	**2.30 PM**
Sample No	**Initial Weight of the Mix [w1], in g**	**Weight of mix after extraction of Bitumen [w2], in g**	**Difference in weight, w=[w1-w2], in g**	**Percentage of Bitumen Extracted = [(w /w1)*100]-100, in %**
1	500	474	26	5.2
2	500	474	26	5.2

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BITUMEN EXTRACTION TEST [FIELD TEST]

NAME OF WORK : Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7& 8 Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

Sub - Name of Work : Improvements to Roads and Drains in Shabari Bakery Road at Kempapura in Ward No 07 - Byatarayanapura, Kodigehalli Sub Division.

Client : **Executive Engineer, Byatarayanapura Division, NO.2152/20, Defence colony, Sahakara Nagara, Bangalore-92**

Name of the Agency : Benaka Developers & Projects Pvt. Ltd.

Reference : Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018

Date of Testing : 15-04-2018

Tests on Bituminous Concrete				
Test No 1			**Test Time :**	**09.20 AM**
Sample No	**Initial Weight of the Mix [w1], in g**	**Weight of mix after extraction of Bitumen [w2], in g**	**Difference in weight, w=[w1-w2], in g**	**Percentage of Bitumen Extracted = [(w /w1)*100]-100, in %**
1	500	473.5	26.5	5.3
2	500	473.5	26.5	5.3
Test No 2			**Test Time :**	**12.05 PM**
Sample No	**Initial Weight of the Mix [w1], in g**	**Weight of mix after extraction of Bitumen [w2], in g**	**Difference in weight, w=[w1-w2], in g**	**Percentage of Bitumen Extracted = [(w /w1)*100]-100, in %**
1	500	474	26	5.2
2	500	474	26	5.2

Note :

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TEST REPORT ON M20 GRADE CONCRETE

NAME OF WORK: Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7& 8Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

Sub - Name of Work : Improvements to Roads and Drains in Shabari Bakery Road at Kempapura in Ward No 07 - Byatarayanapura, Kodigehalli Sub Division.

Client : Executive Engineer, Byatarayanapura Division, NO.2152/20, Defence colony, Sahakara Nagara, Bangalore-92

Name of the Agency : Benaka Developers & Projects Pvt. Ltd.

Reference: Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018

Size of cubes : 150 x150 x 150 mm

Cross Sectional area : 22500 mm2

Grade of concrete : M20

Compressive Strength as on : 28 Days

Sl no	Date of casting	Date of testing	Failure load	Compressive Strength (N/mm2)	Average Compressive Strength (N/mm2)
1	28-01-2018	26-02-2018	485	21.49	
2	28-01-2018	26-02-2018	488	21.64	21.63
3	28-01-2018	26-02-2018	490	21.77	

B.V.H. Consulting Engineers Bangalore

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TEST REPORT ON M20 GRADE CONCRETE

NAME OF WORK: Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7& 8Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

Sub - Name of Work : Improvements to Roads and Drains in Shabari Bakery Road at Kempapura in Ward No 07 - Byatarayanapura, Kodigehalli Sub Division.

Client : Executive Engineer, Byatarayanapura Division, NO.2152/20, Defence colony, Sahakara Nagara, Bangalore-92

Name of the Agency : Benaka Developers & Projects Pvt. Ltd.

Reference: Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018

Size of cubes : 150 x150 x 150 mm

Cross Sectional area : 22500 mm2

Grade of concrete : M20

Compressive Strength as on : 28 Days

Sl no	Date of casting	Date of testing	Failure load	Compressive Strength (N/mm2)	Average Compressive Strength (N/mm2)
1	28-01-2018	26-02-2018	482	21.43	
2	28-01-2018	26-02-2018	486	21.59	21.59
3	28-01-2018	26-02-2018	490	21.77	

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TEST REPORT ON CEMENT

NAME OF WORK: Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7& 8Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

Sub - Name of Work : Improvements to Roads and Drains in Shabari Bakery Road at Kempapura, in Ward No 07 - Byatarayanapura, Kodigehalli Sub Division.

Client : Executive Engineer, Byatarayanapura Division, NO.2152/20, Defence colony, Sahakara Nagara, Bangalore-92

Name of the Agency : Benaka Developers & Projects Pvt. Ltd.

Reference: Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018

Date of Testing: 22/01/2018

SAMPLE ID : Cement (ACC 43 Grade)

PHYSICAL REQUIREMENTS :

Sl no	Description	Test Method as per IS	Test Result	Remarks
1	a) Initial setting time	IS: -4031 (part-5)	128 Minutes	ok
	b) Final setting time	IS: -4031 (part-5)	460Minutes	ok
2	Soundness	IS: 4031 (part-3) La-Chatelier method	3.0 mm	ok
3	Standard Consistency	IS: -4031 (part-4)	25.00%	ok
4	Compressive Strength			
	a) 3 Days	Mpa	26	ok
	b) 7 Days	Mpa	37	ok

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TEST REPORT ON FINE AGGREGATE

NAME OF WORK: Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7& 8Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

Sub - Name of Work : Improvements to Roads and Drains in Shabari Bakery Road at Kempapura, in Ward No 07 - Byatarayanapura, Kodigehalli Sub Division.

Client : Executive Engineer, Byatarayanapura Division, NO.2152/20, Defence colony, Sahakara Nagara, Bangalore-92

Name of the Agency : Benaka Developers & Projects Pvt. Ltd.

Reference: Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018

Date of Testing: 22/01/2018

SAMPLE ID : Sand

Total Wt of Aggregate in gms : 1350

IS Sieve Size in mm	Weight of Retained (gms)	Cumulative Weight of Retained (gms)	Cumulative % of Retained (gms)	Cumulative % of passing	Percentage Passing for grading zone II as per IS 383-1970
10	0	0	0	100	100
4.75	30	30	2.22	97.78	90-100
2.36	62	92	6.81	93.82	75-100
1.18	90	182	13.48	86.52	55-90
600 Micron	480	662	49.03	50.97	35-59
300 Micron	358	1020	75.55	24.45	8-30
150 Micron	325	1345	99.62	0.38	0-10

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TEST REPORT ON COARSE AGGREGATE

NAME OF WORK: Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7& 8Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

Sub - Name of Work : Improvements to Roads and Drains in Shabari Bakery Road at Kempapura, in Ward No 07 - Byatarayanapura, Kodigehalli Sub Division.

Client : Executive Engineer, Byatarayanapura Division, NO.2152/20, Defence colony, Sahakara Nagara, Bangalore-92

Name of the Agency : Benaka Developers & Projects Pvt. Ltd.

Reference: Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018

Date of Testing: 22/01/2018

SAMPLE ID : 20 mm Aggregate

Total Wt of Aggregate in gms : 2300

IS Sieve Size in mm	Weight of Retained (gms)	Cumulative Weight of Retained (gms)	Cumulative % of Retained (gms)	Cumulative % of passing	Percentage Passing for grading zone II as per IS 383-1970
40	0	0	0	100	100
20	195	195	8.125	91.87	95-100
10	1150	1345	56.04	43.96	25-55
4.75	955	2300	95.87	4.125	0-10

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TEST FOR PRIME COAT

NAME OF WORK : Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7& 8Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

Sub - Name of Work : Improvements to Roads and Drains in Shabari Bakery Road at Kempapura in Ward No 07 Byatarayanapura, Kodigehalli Sub Division.

Client : **Executive Engineer, Byatarayanapura Division, NO.2152/20, Defence colony, Sahakara Nagara, Bangalore-92**

Name of the Agency : Benaka Developer & Projects Pvt. Ltd.

Reference : Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018

Date of Testing : 13-04-2018

Tray no.	1	2
Weight of the tray(b)gms	1688	1688
Weight of the tray with prime(a)gms	1713.75	1712.92
Weight of prime(a-b)gms	25.75	24.92
Tray area (sqm)	300*300=0.09sqm	300*300=0.09sqm
Rate of spray (kg/sqm)	0.02575/0.09=0.28 kg/sqm	0.02492/0.09=0.27 kg/sqm
Avg. Rate of spray (kg/sqm)	0.275	

Specified rate as per Specification: 0.25 Kg/sqm

Note:

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TEST FOR PRIME COAT

NAME OF WORK : Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7& 8Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

Sub - Name of Work : Improvements to Roads and Drains in Shabari Bakery Road at Kempapura in Ward No 07 Byatarayanapura, Kodigehalli Sub Division.

Client : **Executive Engineer, Byatarayanapura Division, NO.2152/20, Defence colony, Sahakara Nagara, Bangalore-92**

Name of the Agency : Benaka Developers & Projects Pvt. Ltd.

Reference : Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018

Date of Testing : 13-04-2018

Determination	Unit	Trial no.	
Size of tray in (sqm)		0.45x0.45	0.45x0.45
Area of tray (a)	Sqm	0.2025	0.2025
Initial Wt of empty tray(b)	Kg	1.625	1.627
Final Wt of tray with prime coat (c)	Kg	1.763	1.756
Weight of Prime coat (d=c-b)	Kg	0.1380	0.1290
Rate of Spray of prime coat	Kg/Sqm	0.681	0.637
Average	Kg/Sqm	0.659	
Specified Limit	Kg/Sqm	0.60 Kg/sqm	

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TEST FOR TACK COAT

NAME OF WORK : Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7& 8Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

Sub - Name of Work : Improvements to Roads and Drains in Shabari Bakery Road at Kempapura in Ward No 07 - Byatarayanapura, Kodigehalli Sub Division.

Client : **Executive Engineer, Byatarayanapura Division, NO.2152/20, Defence colony, Sahakara Nagara, Bangalore-92**

Name of the Agency : Benaka Developers & Projects Pvt. Ltd.

Reference : Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018

Date of Testing : 15-04-2018

Prime Coat/tack Coat

Tray no.	1	2
Weight of the tray(b)gms	1688	1688
Weight of the tray with prime(a)gms	1714	1713
Weight of prime(a-b)gms	26	25
Tray area (sqm)	300*300=0.09sqm	300*300=0.09sqm
Rate of spray (kg/sqm)	0.026/0.09=0.29 kg/sqm	0.025/0.09=0.27 kg/sqm
Avg. Rate of spray (kg/sqm)	0.28	

Specified rate as per Specification: 0.25 Kg/sqm

Note:

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TEST FOR TACK COAT

NAME OF WORK : Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7& 8Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

Sub - Name of Work : Improvements to Roads and Drains in Shabari Bakery Road at Kempapura in Ward No 07 - Byatarayanapura, Kodigehalli Sub Division.

Client : **Executive Engineer, Byatarayanapura Division, NO.2152/20, Defence colony, Sahakara Nagara, Bangalore-92**

Name of the Agency : **Benaka Developers & Projects Pvt. Ltd.**

Reference : Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018

Date of Testing : **15-04-2018**

Tray no.	1	2
Weight of the tray(b)gms	1688	1688
Weight of the tray with prime(a)gms	1713.75	1712.92
Weight of prime(a-b)gms	25.75	24.92
Tray area (sqm)	300*300=0.09sqm	300*300=0.09sqm
Rate of spray (kg/sqm)	0.02575/0.09=0.28 kg/sqm	0.02492/0.09=0.27 kg/sqm
Avg. Rate of spray (kg/sqm)	0.275	

Specified rate as per Specification: 0.25 Kg/sqm

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GRADIATION FOR WMM

MORTH TABLE – 400 - 11

NAME OF WORK : Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7 & 8 Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

Sub-Name of road : Improvements to Roads and Drains in Shabari Bakery Road at Kempapura in Ward No 07 - Byatarayanapura, Kodigehalli Sub Division.

Client : Executive Engineer, Byatarayanapura Division, No.2152/20, Defence colony, Sahakara Nagara, Bangalore-92

Name of the Agency : Benaka Developers & Projects Pvt. Ltd.

Reference : Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018

Date of Testing : 14-03-2018

IS Sieve Size in mm	Weight Retained (gms)	Cumulative Weight Retained (gms)	Cumulative % of Retained	Cumulative % of Passing	Specific Limits
53	0	0	0	100	100
45	275	275	3.1	96.9	95-100
22.4	2665	2940	33.3	66.7	60-80
11.2	1345	4285	48.5	51.5	40-60
4.75	1290	5575	63.1	36.9	25-40
2.36	1025	6600	74.7	25.3	15-30
0.600	965	7565	85.6	14.4	8-22
0.075	940	8505	96.2	3.8	0-8

Note:

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Aggregate Impact Value (W.M.M.)

IS : 2386 Part IV

NAME OF WORK : Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7 & 8 Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

Sub-Name of road : Improvements to Roads and Drains in Shabari Bakery Road at Kempapura in Ward No 07 - Byatarayanapura, Kodigehalli Sub Division.

Client : Executive Engineer, Byatarayanapura Division, No.2152/20, Defence colony, Sahakara Nagara, Bangalore-92

Name of the Agency : Benaka Developers & Projects Pvt. Ltd.

Reference : Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018

Date of Testing : 14-03-2018

Sl. No	Details	Trial No.		Average
		1	2	
1	Total Weight of aggregate sample filling the cylindrical measure = W_1 g	388	385	
2	Weight of aggregate passing throw 2.36 mm IS sieve after the test = W_2 g	89	86	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	355	358	
4	Aggregate Impact value = percent fine	22.94	22.34	22.64
	$100*(W_2/W_1)\%$			

Comments:

- **Maximum allowable Aggregate Impact value for Wet Mix Macadam is 30%.**

Note:

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Determination of Flakiness Index & Elongation Index of Coarse Aggregate.

NAME OF WORK : Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7 & 8 Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

Sub-Name of road : Improvements to Roads and Drains in Shabari Bakery Road at Kempapura in Ward No 07 - Byatarayanapura, Kodigehalli Sub Division.

Client : Executive Engineer, Byatarayanapura Division, No.2152/20, Defence colony, Sahakara Nagara, Bangalore-92

Name of the Agency : Benaka Developers & Projects Pvt. Ltd.

Reference : Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018

Date of Testing : 14-03-2018

Result : Flakiness Index = 11.58%.

Elongation Index = 13.58%.

Result: Combined Flakiness & Elongation Index = 25.16%.

Comments:

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%.

Note:

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GRADIATION FOR WMM

MORTH TABLE – 400 - 11

NAME OF WORK : Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7 & 8 Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

Sub-Name of road : Improvements to Roads and Drains at Bhadrappa Layout in Ward No 08 - Kodigehalli, Kodigehalli Sub Division.

Client : **Executive Engineer, Kodigehalli Division, No.2152/20, Defence colony, Sahakara Nagara, Bangalore-92**

Name of the Agency : **Benaka Developers & Projects Pvt. Ltd.**

Reference : Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018

Date of Testing : **02-04-2018**

IS Sieve Size in mm	Weight Retained (gms)	Cumulative Weight Retained (gms)	Cumulative % of Retained	Cumulative % of Passing	Specific Limits
53	0	0	0	100	100
45	275	275	3.1	96.9	95-100
22.4	2665	2940	33.3	66.7	60-80
11.2	1345	4285	48.5	51.5	40-60
4.75	1290	5575	63.1	36.9	25-40
2.36	1025	6600	74.7	25.3	15-30
0.600	965	7565	85.6	14.4	8-22
0.075	940	8505	96.2	3.8	0-8

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TEST FOR TACK COAT

NAME OF WORK : Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7& 8Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

Sub - Name of Work : Improvements to Roads and Drains at Lottegollahalli Main Road Opp. RMV Cluster Apartments to Railway Gate near Vyasa School in Ward No 08 - Kodigehalli, Kodigehalli Sub Division.

Client : **Executive Engineer, Kodigehalli Division, NO.2152/20, Defence colony, Sahakara Nagara, Bangalore-92**

Name of the Agency : **Benaka Developers & Projects Pvt. Ltd.**

Reference : Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018

Date of Testing : **05-04-2018**

Prime Coat/tack Coat

Tray no.	1	2
Weight of the tray(b)gms	1688	1688
Weight of the tray with prime(a)gms	1714	1713
Weight of prime(a-b)gms	26	25
Tray area (sqm)	300*300=0.09sqm	300*300=0.09sqm
Rate of spray (kg/sqm)	0.026/0.09=0.29 kg/sqm	0.025/0.09=0.27 kg/sqm
Avg. Rate of spray (kg/sqm)	0.28	

Specified rate as per Specification: 0.25 Kg/sqm

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TEST FOR TACK COAT

NAME OF WORK : Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7& 8Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

Sub - Name of Work : Improvements to Roads and Drains at Lottegollahalli Main Road Opp. RMV Cluster Apartments to Railway Gate near Vyasa School in Ward No 08 - Kodigehalli, Kodigehalli Sub Division.

Client : **Executive Engineer, Kodigehalli Division, NO.2152/20, Defence colony, Sahakara Nagara, Bangalore-92**

Name of the Agency : **Benaka Developers & Projects Pvt. Ltd.**

Reference : Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018

Date of Testing : **05-04-2018**

Tray no.	1	2
Weight of the tray(b)gms	1688	1688
Weight of the tray with prime(a)gms	1713.75	1712.92
Weight of prime(a-b)gms	25.75	24.92
Tray area (sqm)	300*300=0.09sqm	300*300=0.09sqm
Rate of spray (kg/sqm)	0.02575/0.09=0.28 kg/sqm	0.02492/0.09=0.27 kg/sqm
Avg. Rate of spray (kg/sqm)	0.275	

Specified rate as per Specification: 0.25 Kg/sqm

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BITUMEN EXTRACTION TEST [FIELD TEST]

NAME OF WORK : Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7& 8 Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

Sub - Name of Work : Improvements to Roads and Drains at Sahakaranagara in Ward No 08 - Kodigehalli, Kodigehalli Sub Division.

Client : **Executive Engineer, Kodigehalli Division, NO.2152/20, Defence colony, Sahakara Nagara, Bangalore-92**

Name of the Agency : **Benaka Developers & Projects Pvt. Ltd.**

Reference : Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018

Date of Testing : 10-04-2018

Tests on Bituminous Concrete				
Test No 1			**Test Time :**	**10.15 AM**
Sample No	**Initial Weight of the Mix [w1], in g**	**Weight of mix after extraction of Bitumen [w2], in g**	**Difference in weight, w=[w1-w2], in g**	**Percentage of Bitumen Extracted = [(w /w1)*100]-100, in %**
1	500	473.5	26.5	5.3
2	500	473.5	26.5	5.3
Test No 2			**Test Time :**	**11.35 AM**
Sample No	**Initial Weight of the Mix [w1], in g**	**Weight of mix after extraction of Bitumen [w2], in g**	**Difference in weight, w=[w1-w2], in g**	**Percentage of Bitumen Extracted = [(w /w1)*100]-100, in %**
1	500	474	26	5.2
2	500	474	26	5.2

Note :

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2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be within 30 days from the date of testing.

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TEST FOR PRIME COAT

NAME OF WORK : Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7& 8Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

Sub - Name of Work : Improvements to Roads and Drains at Sahakaranagara in Ward No 08 Kodigehalli, Kodigehalli Sub Division.

Client : **Executive Engineer, Kodigehalli Division, NO.2152/20, Defence colony, Sahakara Nagara, Bangalore-92**

Name of the Agency : **Benaka Developers & Projects Pvt. Ltd.**

Reference : Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018

Date of Testing : **08-04-2018**

Tray no.	1	2
Weight of the tray(b)gms	1688	1688
Weight of the tray with prime(a)gms	1713.75	1712.92
Weight of prime(a-b)gms	25.75	24.92
Tray area (sqm)	300*300=0.09sqm	300*300=0.09sqm
Rate of spray (kg/sqm)	0.02575/0.09=0.28 kg/sqm	0.02492/0.09=0.27 kg/sqm
Avg. Rate of spray (kg/sqm)	0.275	

Specified rate as per Specification: 0.25 Kg/sqm

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Determination	Unit	Trial no.	
Size of tray in (sqm)		0.45x0.45	0.45x0.45
Area of tray (a)	Sqm	0.2025	0.2025
Initial Wt of empty tray(b)	Kg	1.625	1.627
Final Wt of tray with prime coat (c)	Kg	1.763	1.756
Weight of Prime coat (d=c-b)	Kg	0.1380	0.1290
Rate of Spray of prime coat	Kg/Sqm	0.681	0.637
Average	Kg/Sqm	0.659	
Specified Limit	Kg/Sqm	0.60 Kg/sqm	

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TEST FOR TACK COAT

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Client : **Executive Engineer, Kodigehalli Division, NO.2152/20, Defence colony, Sahakara Nagara, Bangalore-92**

Name of the Agency : **Benka Developers & Projects Pvt. Ltd.**

Reference : Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018

Date of Testing : **10-04-2018**

Prime Coat/tack Coat

Tray no.	1	2
Weight of the tray(b)gms	1688	1688
Weight of the tray with prime(a)gms	1714	1713
Weight of prime(a-b)gms	26	25
Tray area (sqm)	300*300=0.09sqm	300*300=0.09sqm
Rate of spray (kg/sqm)	0.026/0.09=0.29 kg/sqm	0.025/0.09=0.27 kg/sqm
Avg. Rate of spray (kg/sqm)	0.28	

Specified rate as per Specification: 0.25 Kg/sqm

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Avg. Rate of spray (kg/sqm)	0.275	

Specified rate as per Specification: 0.25 Kg/sqm

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TEST REPORT ON CEMENT

NAME OF WORK: Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7& 8Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

Sub - Name of Work : Construction of RO water purifier plant at Balaji layout, in Ward No. 8 Kodigehalli, Kodigehalli Sub Division.

Client : Executive Engineer, Kodigehalli Division, NO.2152/20, Defence colony, Sahakara Nagara, Bangalore-92

Name of the Agency : Benaka Developers & Projects Pvt. Ltd.

Reference: Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018

Date of Testing: 16-01-2018

SAMPLE ID : Cement (ACC 53 Grade)

PHYSICAL REQUIREMENTS :

Sl no	Description	Test Method as per IS	Test Result	Remarks
1	a) Initial setting time	IS: -4031 (part-5)	128 Minutes	OK
	b) Final setting time	IS: -4031 (part-5)	460Minutes	OK
2	Soundness	IS: 4031 (part-3) La-Chatelier method	3.0 mm	OK
3	Standard Consistency	IS: -4031 (part-4)	25.00%	OK
4	Compressive Strength			OK
	a) 3 Days	Mpa	26	OK
	b) 7 Days	Mpa	37	OK

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TEST REPORT ON FINE AGGREGATE

NAME OF WORK: Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7& 8Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

Sub - Name of Work : Construction of RO water purifier plant at Balaji layout, in Ward No. 8 Kodigehalli, Kodigehalli Sub Division.

Client : Executive Engineer, Kodigehalli Division, NO.2152/20, Defence colony, Sahakara Nagara, Bangalore-92

Name of the Agency : Benaka Developers & Projects Pvt. Ltd.

Reference: Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018

Date of Testing: 16-01-2018

SAMPLE ID : Sand

Total Wt of Aggregate in gms : 1350

IS Sieve Size in mm	Weight of Retained (gms)	Cumulative Weight of Retained (gms)	Cumulative % of Retained (gms)	Cumulative % of passing	Percentage Passing for grading zone II as per IS 383-1970
10	0	0	0	100	100
4.75	30	30	2.22	97.78	90-100
2.36	62	92	6.81	93.82	75-100
1.18	90	182	13.48	86.52	55-90
600 Micron	480	662	49.03	50.97	35-59
300 Micron	358	1020	75.55	24.45	8-30
150 Micron	325	1345	99.62	0.38	0-10

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TEST REPORT ON COARSE AGGREGATE

NAME OF WORK: Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7& 8Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

Sub - Name of Work : Construction of RO water purifier plant at Balaji layout, in Ward No. 8 Kodigehalli, Kodigehalli Sub Division.

Client : Executive Engineer, Kodigehalli Division, NO.2152/20, Defence colony, Sahakara Nagara, Bangalore-92

Name of the Agency : Benaka Developers & Projects Pvt. Ltd.

Reference: Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018

Date of Testing: 16-01-2018

SAMPLE ID : 40 mm Aggregate

Total Wt of Aggregate in gms : 500

IS Sieve Size in mm	Weight of Retained (gms)	Cumulative Weight of Retained (gms)	Cumulative % of Retained (gms)	Cumulative % of passing	Percentage Passing for grading zone II as per IS 383-1970
40	0	0	0	100	100
20	12	12	2.40	97.60	95-100
10	262	274	54.80	45.20	25-55
4.75	185	500	91.80	8.20	0-10

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Reference: Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018

Date of Testing: 16-01-2018

SAMPLE ID : 20 mm Aggregate

Total Wt of Aggregate in gms : 2300

IS Sieve Size in mm	Weight of Retained (gms)	Cumulative Weight of Retained (gms)	Cumulative % of Retained (gms)	Cumulative % of passing	Percentage Passing for grading zone II as per IS 383-1970
40	0	0	0	100	100
20	195	195	8.125	91.87	95-100
10	1150	1345	56.04	43.96	25-55
4.75	955	2300	95.87	4.125	0-10

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TEST REPORT ON REINFORCEMENT STEEL

NAME OF WORK : Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7& 8Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

Sub - Name of Work : Construction of RO water purifier plant at Balaji layout, in Ward No. 8 Kodigehalli, Kodigehalli Sub Division.

Client : Executive Engineer, Kodigehalli Division, NO.2152/20, Defence colony, Sahakara Nagara, Bangalore-92

Name of the Agency : Benaka Developers & Projects Pvt. Ltd.

Reference: Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018

Date of Testing : 25-01-2018

SAMPLE ID : Fe 500 TMT Steel Bars

Sl. no	Dia in MM	Weight in Kg/m	C/s area in mm2	Ultimate load in KN	Ultimate Tensile stress in N/mm2	Remarks
1	10	0.616	78.53	41.84	533	OK
2	12	0.888	113.097	61.94	548	OK
3	16	1.578	201.061	109.5	545	OK

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